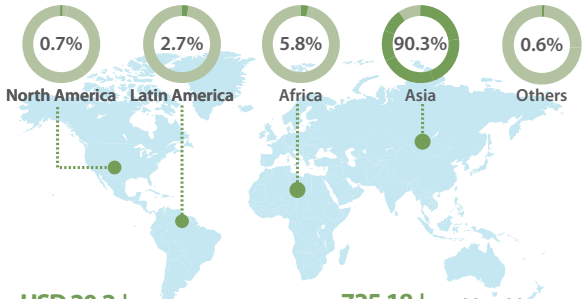
World Rice (*Oryza sativa L.*) Production

World production: 161.20 million hectares

% of Rice produced-hectares planted



USD 20.2 Billion | Global Export Sales Amounted

725.18 Million metric tons | World Paddy* Rice Production

**Rice with husk (rough rice/paddy rice)*

Sources: International Rice Research Institute, 2018 Data and MIT Observatory for Economic Complexity

Top 10 Paddy Rice Producing Countries

	Million Metric Tons	Region	% of Global
China	203.1	Asia	28%
India	163.5	Asia	23%
Indonesia	58.7	Asia	8%
Bangladesh	52.1	Asia	7%
Vietnam	45.9	Asia	6%
Thailand	32.1	Asia	4%
Myanmar	20.9	Asia	3%
Philippines	19.6	Asia	3%
Brazil	11.8	L. America	2%
Pakistan	11.1	Asia	2%

Source: International Rice Research Institute, 2018

Overview of Global Rice Trade

	Paddy rice Husk on	Milled Rice Processed	Rice By-products
Thousand Metric Tons	725,178	485,349	239,829
Global % of Paddy Rice	100%	67%	33%

Source: International Rice Research Institute, 2018

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Top 10 Exporting Countries

Paddy Rice

	Thousand Metric Tons	Region	% of Global
India	13,000	Asia	26%
Thailand	11,000	Asia	22%
Vietnam	6,800	Asia	14%
Pakistan	4,000	Asia	8%
Myanmar	3,500	Asia	7%
USA	3,300	N. America	7%
China	1,800	Asia	4%
Cambodia	1,300	Asia	3%
Uruguay	800	L. America	2%
Brazil	700	L. America	1%

Source: International Rice Research Institute, 2018

World Fairtrade Certified Rice

	India	Pakistan	Sri Lanka	Thailand
# of Producers	3	1	2	8
# of Producer & Trading Companies /Manufacturing & Processing Companies	20	2	0	7
Total	23	3	2	15

Source: International Rice Research Institute, 2018

Sustainable Rice Platform

107 Government agencies, research institutes, supply chain actors, civil society organizations, civil service, and input and equipment providers from 32 countries, including Brazil and Uruguay, are part of the global platform.

Source: Sustainable Rice – Members' List

Top 10 Latin American Producing Countries

Paddy Rice

	Thousand Metric Tons	Thousand Hectares
Brazil	11,800	1,960
Peru	3,159	430
Colombia	2,412	510
Ecuador	1,333	310
Argentina	1,300	200
Uruguay	1,267	150
Paraguay	1,006	175
Nicaragua	455	104
Bolivia	355	137
Panamá	277	100

Source: International Rice Research Institute, 2018

Top 5 World Consuming Countries

Thousand Metric Tons

China	India	Indonesia	Bangladesh	Vietnam
144,000	98,200	38,200	35,600	22,200
30%	20%	8%	7%	5%

Source: International Rice Research Institute, 2018

Top 10 Rice Importing Countries

	Million Metric Tons	Region	% of Global
China	5.5	Asia	12.3%
Nigeria	3.0	Africa	6.7%
Ivory Coast	1.7	Africa	3.7%
Iran	1.4	Asia	3.1%
Saudi Arabia	1.3	Asia	2.9%
Senegal	1.3	Africa	2.9%
Indonesia	1.2	Asia	2.9%
Iraq	1.2	Asia	2.9%
Bangladesh	1.1	Asia	2.9%
Philippines	1.1	Asia	2.9%

Source: International Rice Research Institute, 2018

THE RICE JOURNEY

Rice Production Process

Rice is grown in warm, waterlogged soil and takes 3 – 5 months to reach maturity. Production process involves:

Pre-planting:

Ensure rice varieties and seed quality – Plant clean, healthy and high-quality seed.

Develop a crop calendar - A crop calendar improves timeliness and reduces costs.

Prepare the land– Prepare and level the field well. A well-prepared and levelled field gives a uniform, healthy crop which can compete with weeds, use less water, and give higher yields at lower cost.

Growth:

Planting – Plant on time for higher yields. Rice can either be transplanted from a nursery or seeded directly in the field.

Water management – Use water efficiently. On average, it takes 1.4 liters of water to produce 1 kg of rice. Apply water-saving technologies such as alternate wetting and drying (AWD) and change puddled transplanting to non-puddled transplanting, or dry-direct seeding to reduce water use.

Soil fertility – Use organic fertilizer (manure, compost, straw, husk, plant leaves) whenever possible and use site-specific nutrient management (SSNM) to adjust fertilizer use for high yields and reduce negative environmental effects.

Weed management – It should be practiced during land preparation, in nursery and during early crop growth to reduce the dependency on agrochemicals.

Pests and diseases – Control pests and diseases effectively. Prevention is the best pest and disease control method. Practicing good cleaning of equipment and cleaning the field between seasons are some examples.

Post-production:

Harvesting – Harvest on time. Protect the harvest, thresh and dry ideally within 24 hours of cutting.

Storage – Store the grain safely in paddy form, because the husk provides some protection against insects and prevents grain quality from deterioration.

Milling and processing – Poor grain quality into the mill means poor quality rice. Rice is best milled at 13–14% moisture content.

Funded by:

Federal Ministry for Economic Cooperation and Development | UK Government | KFW | FMO | OeEB | IDB Invest | Calvert Impact Capital | asn bank | Raiffeisen Bank International | Conservation International | finance in motion

Sustainable Rice

Rice is the third largest crop globally (by harvested area). It is the main staple food for 3.5 billion people, it uses 40% of world's irrigation water and is responsible for 10% of global greenhouse gas emissions. To provide a safe, healthy, sustainable and quality rice to consumers, the following measures should be considered:

Ecosystem Conservation

- Prohibit farming in protected areas
- Prevent introduction of invasive species
- Enhance applicable site-specific biodiversity measures

Water Conservation

- Improve water efficiency and greenhouse gases reduction through precision levelling, alternate wetting and drying (AWD) and water management
- Use sustainable groundwater sources to avoid depletion of water
- Reduce discharge of wastewater and nutrients into natural water bodies

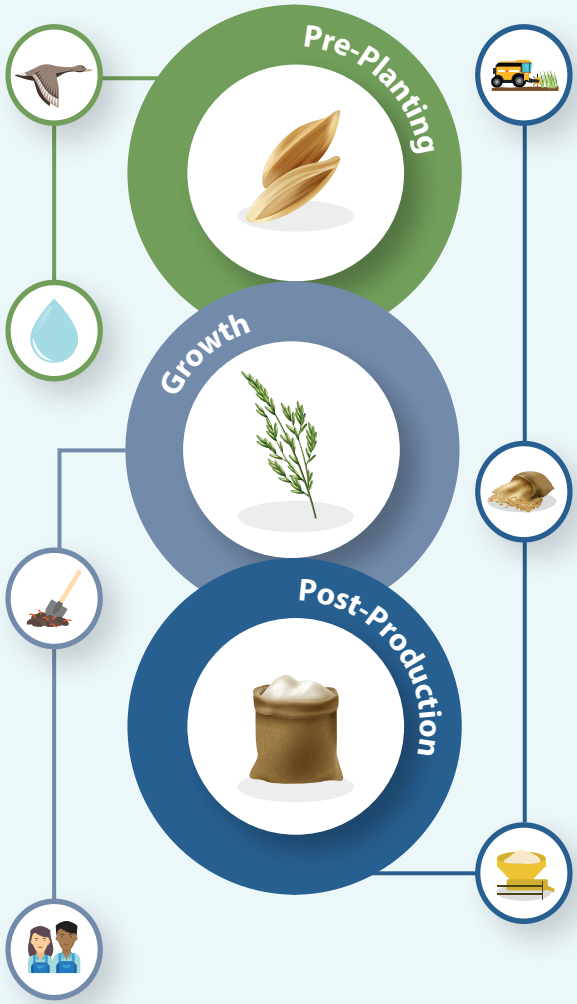
Waste Management

- Use surface drainage to avoid contamination of potential chemical use
- Reduce waste through efficient site-specific nutrient management

Social and Labor Management

- Prohibit hiring children under 15, older (if hired), must not be engaged in hazardous labour*
- Ensure the value chain develops innovative ways to do commercially-viable business with all rice producers, benefiting low-income communities
- Generate decent incomes and jobs for all actors along the value chain, especially for smallholder farmers
- Prohibit forced, compulsory, or slave labour
- Prohibit discrimination or disrespectful treatment of workers, including working household members

Standard for Sustainable Rice Cultivation. Additional Guidance. Sustainable Rice Platform. Version 2.1 of January 2020. www.sustainablerice.org



Practices and Benefits

Integrated Farm Management

- Use new technologies to assist producers in decision-making about farming activities
- Develop a written crop calendar in advance for each cropping season to improve timeliness and reduce costs
- Use pure quality seeds, free of weed seeds, pests, and diseases to reduce the seeding rate and increase yields
- Use organic material (e.g. animal manure, green manure, mulch, rice straw) as fertilizer to reduce greenhouse gas emissions
- Implement preventative pest control methods and Integrated Pest Management (IPM) to reduce losses
- Implement crop rotation to break pest cycles
- Harvest at the appropriate time to optimize grain quality

Water Quality

- Implement water management system that applies to most of the land under cultivation to optimise its use
- Obtain incoming water from clean sources, free of biological, saline, and heavy metal contamination
- Improve water quality through smart-rice cultivars

Soil Conservation

- Use physical and cultural soil conservation practices to have a uniform, healthy crop that can compete with weeds, use less water, and give higher yields at a lower cost
- Analyse and monitor the risk of soil salinity
- Level the land and identify the best system to attain optimal yields
- Improve soil quality through efficient fertilizer with grid-based sampling and no-till practices to reduce greenhouse gas emissions and improve soil health

About us: The eco.business Fund aims to promote business and consumption practices that contribute to biodiversity conservation, to the sustainable use of natural resources, and to mitigate climate change and adapt to its impacts. By providing financing for business practices that conserve nature and foster biodiversity, the fund seeks investments with both environmental and financial returns. The fund mainly provides loans to qualified financial institutions that on-lend the money to eligible borrowers, which include holders of recognized certifications or those making improvements in line with conservation and biodiversity goals. The fund supports sustainable operations in the sectors of agriculture, fishery (including aquaculture), forestry and tourism.

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